

a [vector sum excited linear prediction (VSELP)] speech signal encoder for compressing input speech signals by digital signal processing [at a] for high [efficiency] quality voice transmission at a low bit rate and for producing patterns of analytic parameters from the input speech signal; [,]

a transmitting and receiving circuit for transmitting the compressed speech signals output by [the VSELP] said speech signal encoder and for receiving compressed speech signals [received] transmitted from another transmitter and reproducing a corresponding received sound; [,]

noise domain detection means supplied with [analytic patterns] patterns of analytic parameters produced by [the VSELP] said speech signal encoder during compression of the input speech signals for [detecting a noise level of a noise domain of the input speech signals, and] determining a noise domain in which only noise exists in the input speech signal;

noise level detecting means for detecting a noise level of the input speech signal in the noise domain; and

means for controlling [the sound volume of the reproduced, received sound] a volume of the corresponding received sound responsive to the noise level detected by said noise domain detection means.

2. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a first-order linear prediction encoding

coefficient as [an] one of the analytic [parameter] parameters for each frame of a plurality of frames and deems a frame to be [a] the noise domain if the first-order linear prediction encoding coefficient is smaller than a pre-set threshold.

3. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 2 wherein said noise domain detection means employs a pitch gain indicating the intensity of pitch components as one of the analytic [parameter] parameters for each frame and deems a frame to be [a] the noise domain if the pitch gain is within a pre-set range.

4. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 3 wherein said noise domain detection means employs a pitch lag [gain indicating the intensity of pitch components] as one of the analytic [parameter] parameters for each frame and deems a frame to be [a] the noise domain if the pitch [gain] lag is zero.

5. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 4 wherein said noise domain detection means employs a frame power as one of the analytic [parameter] parameters for each frame and deems a particular frame to be [a] the noise domain if the frame power for the particular frame is smaller than a pre-set threshold.

6. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 5 wherein, if an amount of change of the frame

C1  
power between a current frame and a past frame exceeds a pre-set threshold, said noise domain detection means deems said current frame to be a speech domain, even if said current domain is [a] the noise domain.

C2  
8. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 7 wherein [a] said noise level detection means performs filtering on a noise level output of the noise domain detected by said noise domain detection means.

C3  
10. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a pitch gain indicating the intensity of pitch components as one of the analytic [parameter] parameters for each frame of a plurality of frames and deems a frame to be [a] the noise domain if the pitch gain is within a pre-set range.

11. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a pitch lag [gain indicating the intensity of pitch components] as one of the analytic [parameter] parameters for each frame of a plurality of frames and deems a frame to be [a] the noise domain if the pitch [gain] lag is zero.

12. (Twice Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a frame power as one of the analytic

C3 [parameter] parameters for each frame of a plurality of frames and deems a frame to be [a] the noise domain if the frame power for said one frame is smaller than a pre-set threshold.

CA 13. (Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a frame power as one of the analytic parameters for each frame of a plurality of frames and, if an amount of change of the frame power between a current frame and a past frame exceeds a pre-set threshold, said noise domain detection means deems said current frame to be a speech domain, even if said current domain is [a] the noise domain.

14. (Amended) The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means detects the noise [detection] domain in view of the value of the analytic parameters over plural consecutive frames.

C5 17. (Twice Amended) A speech signal transmitting and receiving apparatus having a transmitter and a receiver, comprising:

noise level detection means for detecting a sound signal level entering a transmitting microphone as a noise level when there is no transmitting speech input at said transmitter[,]; and

control means for controlling [the reproduction volume of a received sound] a volume of sound reproduced from a compressed speech signal received from another transmitter responsive to the noise level detected by said noise level detection means.